

Once a major blood vessel of brain such as MCA is permanently occluded, even if nerve cells in the ischemic penumbra are rescued initially by the action of a powerful neuroprotectant, and if cerebrovascular regeneration and/or reconstruction can not be achieved, meanwhile nerve cells in the ischemic penumbra once rescued are possibly going to death. As a result, expansion of cerebral infarct lesion occurs frequently within one month after MCA permanent occlusion. Such a time-dependent expansion of cerebral infarct lesion is frequently observed in the clinical field, and this is the pathological ground for the worst prognosis of patients with cerebral infarction. Quite unfortunately, there have been no drugs which could reduce volume of lesion to about 1/4 compared to that of non-administered group even in acute phase as well as one month after the onset of cerebral infarction by intravenous administration after MCA permanent occlusion. In the present invention, the intravenous administration of ginsenoside Rb<sub>1</sub> after the onset of cerebral infarction can reduce the lesion to about 1/4 compared to the non-administered group at one month after permanent MCA occlusion. Based on this fact, ginsenoside Rb<sub>1</sub> appears to be the most effective nerve cell protector in the human history. Consequently, various nerve cell or brain cell protectors can be newly developed by using ginsenoside Rb<sub>1</sub> or its metabolites as a leading compound(s). In addition, as the results of modifying a part(s) of the chemical

structure of ginsenoside Rb<sub>1</sub> to prepare prodrugs thereof, any routes of administration and any methods for administration can be selected as described hereinbefore. Finally, the pharmaceutical compositions of the present invention exhibit almost no adverse effects, consequently the present invention provides highly safe pharmaceuticals.

## CLAIMS

1. A pharmaceutical composition comprising ginsenoside  $Rb_1$ , its metabolites or salt thereof for prevention, treatment or therapy of diseases caused by injuries to the nervous tissues or to the spinal cord.
2. The pharmaceutical composition for prevention, treatment or therapy according to claim 1, comprising suppressing the secondary degeneration of the nervous tissues caused by injuries to the nervous tissues.
3. The pharmaceutical composition for prevention, treatment or therapy according to claim 2 wherein the nervous tissue having the secondary degeneration is the thalamus after cerebrocortical infarction.
4. The pharmaceutical composition for prevention, treatment or therapy according to claim 2 or 3 wherein disease causing the secondary degeneration of the nervous tissues is spinal cord injury.
5. The pharmaceutical composition for prevention, treatment or therapy according to claim 1 wherein said prevention, treatment or therapy is achieved by means of vascular regeneration and/or reconstruction of the injured nervous tissues or spinal cord.
6. The pharmaceutical composition for prevention, treatment or therapy according to claim 5 wherein the blood vessels are